

Appl. No.: 10/798,164
Amendment Dated: September 12, 2006
Reply to Office Action of March 13, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Canceled)**
2. **(Currently Amended)** The surfactant composition of claim 5129, characterized in that the surfactant composition comprises
 - (A) 5 to 60 wt%, referring to components (A) and (B), of one or more gemini surfactant(s) and,
 - (B) referring to the remainder 95 to 40 wt.%, based on the total of components (A) and (B), of said ~~one or more~~ co-amphiphile(s).
3. **(Currently Amended)** The surfactant composition according to any of claims 2 or 5150, further comprising
 - (C) at least 0.1 wt% water, referring to the total composition.
4. **(Currently Amended)** A surfactant composition according to any of claims 2 or 5150, further comprising
 - (D) at least 0.1 wt% of one or more oil component(s), referring to the total composition.

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5. **(Canceled)**
6. **(Currently Amended)** A surfactant composition according to any of claims 2 or 5150 in the form of an emulsion, characterized in that the co-amphiphiles are ~~is~~ present in solid form at 25°C.
7. **(Currently Amended)** A surfactant composition according to any of claims 2 or 5150 in the form of a dispersion, characterized in that the co-amphiphiles are ~~is~~ present in liquid form at 25°C.
8. **(Canceled)**
9. **(Currently Amended)** A surfactant composition according to any of claims 2 or 5150, wherein the two at least one co-amphiphiles are ~~is~~
 - a C₆- to C₄₀- alcohol, and
 - a mono-, di-, and triglyceride of C₆- to C₂₂-carboxylic acid, ~~and~~
 - [[~~-~~]] ~~mixtures thereof.~~
10. **(Currently Amended)** A surfactant composition according to claim 9, characterized in that the surfactant composition comprises
 - 30 to 50 wt% of C₆- to C₄₀- alcohol, and

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- 30 to 50 wt% of a mono-, di-, and triglyceride of a C₆- to C₂₂-carboxylic acid, and

[[(-)] mixtures thereof,

each referring to the gemini surfactant/co-amphiphile(s) composition.

11. **(Currently Amended)** A surfactant composition according to any of claims 2 or ~~5150~~ in the form of an emulsion, characterized in that the surfactant composition can be produced by a method (phase transfer temperature (PTT) method), which includes at least the following step:

combining

- (a) a composition (a) comprising the gemini surfactant (A) wherein the composition has a temperature X, with
- (b) a composition (b) comprising the co-amphiphile (B) wherein the composition has a temperature Y,

the temperature Y being greater than temperature X.

12. **(Original)** The surfactant composition of claim 11, characterized in that the temperature Y is not more than 15°C higher than the critical phase transfer temperature of the surfactant in composition (b).

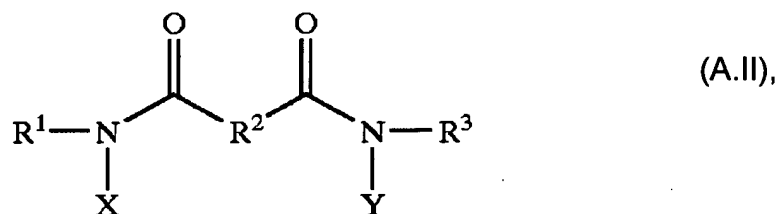
13. **(Original)** Surfactant compositions according to claim 12, characterized in that the temperatures X and Y are different by at least 3°C.

14-16. **(Canceled)**

17. **(Currently Amended)** A surfactant composition according to any of claims 2 or 5150, characterized in that the surfactant composition comprises 0.01 to 30 wt% of the components (A) and (B), referring to the total composition. [[,]]

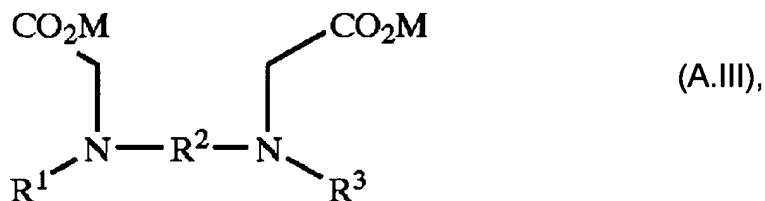
18. **(Canceled)**

19. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (A.II).



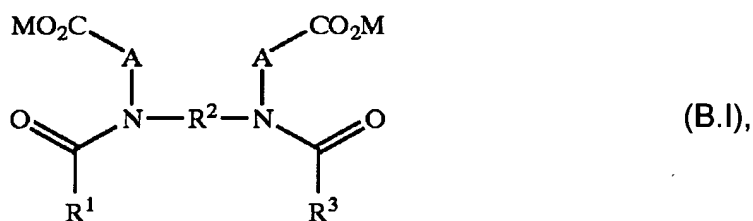
wherein the substituents have the meanings as defined by the general formula (A.I).

20. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (A.III).



wherein the substituents have the meanings as defined by the general formula (A.I).

21. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (B.1).



wherein the substituents have the following meanings:

R^1, R^3 C_5 - to C_{25} -alkyl group that can be branched, unbranched, saturated, or unsaturated as far as not adjacently diunsaturated;

R^2 $\text{C}_1[[,]]$ - to C_{12} -alkylene

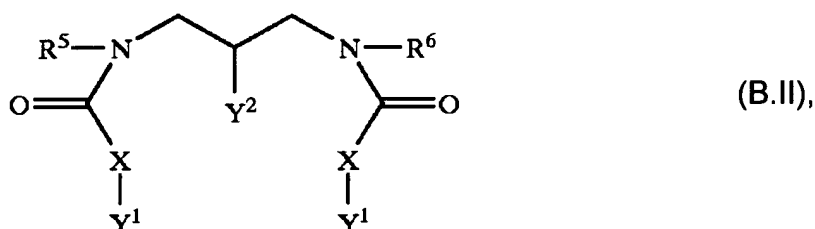
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A CHR^4 , CH_2 , C_2H_4 , C_3H_6 , C_4H_8 ;
R⁴ aminocarboxylic acid radical, and
M alkali, (alkyl)ammonium, alkanol ammonium, H, or 1/2
alkaline earth.

22. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50,
characterized in that the gemini surfactant has the general formula (B.II).



wherein the substituents have the meanings as defined by the general
formula (B.I), and

R⁵, R⁶ represent a C₆- to C₃₆-alkyl group that can be branched,
unbranched, saturated, or unsaturated as far as not adjacently
diunsaturated;

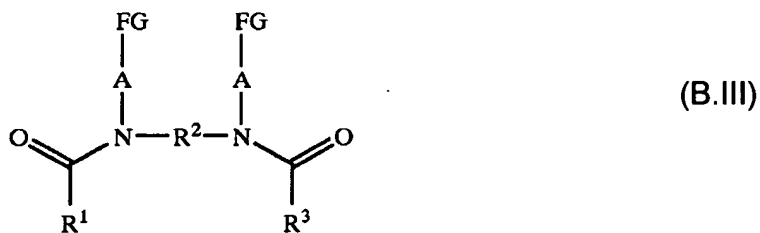
X is an alkylene- or alkenylene group having from 1 to 6 carbon
atoms, which may be substituted with a hydroxyl group or a sulfonic
acid group or a carboxyl group;

Y¹ is a sulfonate- or sulfate group or a

carboxyl group, and

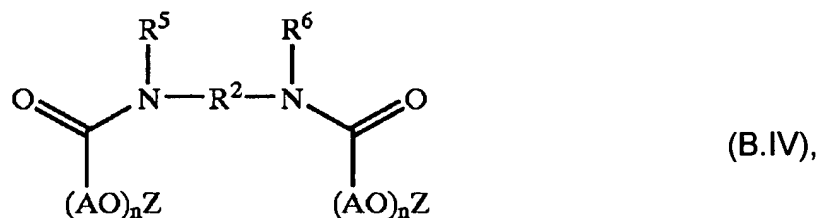
Y^2 represents a hydroxyl group, a sulfuric acid residue, or
-O-(CO)X-COOH.

23. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50,
characterized in that the gemini surfactant has the general formula (B.III).



wherein the substituents have the meanings as defined by the general
formula (B.1) of, and FG represents -COOM or -SO₃M.

24. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (B.IV).



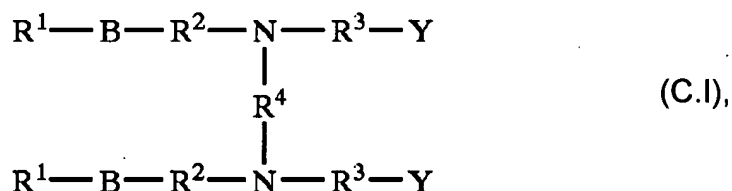
wherein the substituents have the meanings as

defined by the general formulas (B.1) and (B.11) and

AO represents alkylene oxide units wherein $n = 1$ to 20, and

Z is $-\text{SO}_3\text{M}$, $-\text{C}_2\text{H}_4\text{SO}_3\text{M}$, $-\text{C}_3\text{H}_6\text{SO}_3\text{M}$, $\text{P}(\text{O})(\text{OM})_2$, $-\text{CH}_2-\text{COOM}$, or $\text{C}_2\text{H}_4-\text{COOM}$.

25. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (C.I).



wherein the substituents have the following meanings:

R^1 C_5 - to C_{25} -alkyl group that can be branched, unbranched, saturated, or unsaturated as far as not adjacently diunsaturated, hydroxy-substituted or perfluorinated;

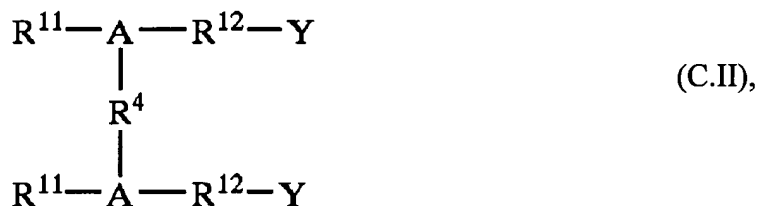
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- R^2 C₁- to C₁₂-alkylene or hydroxy-substituted derivatives thereof;
B an amide group, a carboxyl group, or a polyether group;
 R^5 C₁-, to C₄-alkyl, hydroxy-substituted alkyl, or H;
 R^6 C₂- to C₄-alkylene;
x a number from 1 to 20;
 R^3 C₁- to C₁₂-alkyl or hydroxy-substituted derivatives thereof, R^7 -D- R^7 , or a polyether group;
 R^7 C₁- to C₆- alkylene or hydroxy-substituted derivatives thereof;
D -O-, -S-, -N(R^8)-;
 R^4 alkylene or alkylaryl having from 1 to 12 carbon atoms, the hydroxy-substituted derivatives, or R^9 -D¹- R^9 ;
 R^8 C₁- to C₁₂-alkyl or hydroxy-substituted alkyl, H, or R^9 -D¹- R^9 ;
 R^9 C₁- to C₆-alkylene, hydroxy-substituted derivatives thereof, or aryl;
D¹ -O-, -S-, -SO₂-, -C(O)-, [-O(R^7 -O)_x-], (R^{10})_t[N(R^{10})]_z, or aryl;
 R^{10} C₁-, to C₁₂-alkyl, hydroxy-substituted alkyl, H, or aryl;
t, z are independently a number from 1 to 4; and
Y is independently -SO₃H, -O-SO₃H, -OP(O)(OH)₂, -P(O)(OH)₂, -COOH, -CO₂-C₆H₄-SO₃H, or the salts thereof.

26. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (C.II).

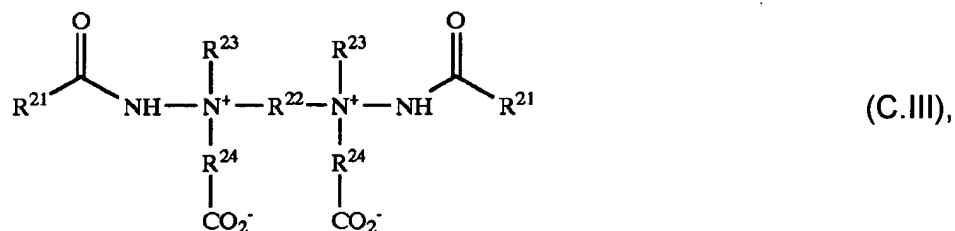


wherein the substituents have the meanings as

defined by the general formula (C.I), and

- R^{11} is a C_5 - to C_{23} -alkyl group that can be branched, unbranched, saturated, unsaturated as far as not adjacently diunsaturated, hydroxy-substituted, or perfluorinated or R^{14} -B- R^2 ;
- R^{14} is a C_1 - to C_{12} -alkyl group that can be branched, unbranched, saturated, unsaturated as far as not adjacently diunsaturated, or the hydroxy-substituted derivatives;
- R^{12} means a C_1 - to C_{12} -alkylene group that can be branched, unbranched, saturated, unsaturated as far as not adjacently diunsaturated, the hydroxy-substituted derivatives, or an amide group, a carboxyl group, a polyether group; and
- A is $-CR^6=$ or $-N=$, if whenever A is equal to $-N=$, R^{11} represents R^{14} -B- R^2 .

27. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (C.III).



wherein the substituents have the meanings as defined by the general formulas (C.I) and (C.II) and

R^{21} represents a C^5 - to C^{23} -alkyl group that can be branched, unbranched, saturated, or unsaturated as far as not adjacently diunsaturated;

R^{22} , R^{24} are C_1 - to C_6 -alkylene;

R^{23} is methyl, ethyl, propyl, or a polyether group.

28-31. **(Canceled)**

32. **(Currently Amended)** The surfactant composition any of claims 2 or ~~51~~50 wherein said one or more gemini surfactants are present in an amount of from 10 to 60 wt%.
33. **(Currently Amended)** The surfactant composition any of claims 2 or ~~51~~50 wherein said one or more gemini surfactants are present in an amount of from 10 to 50 wt%.

34. **(Currently Amended)** The surfactant composition any of claims 2 or 5150 wherein said long chain alcohol is a C₈- to C₂₄- alcohol.
35. **(Currently Amended)** The surfactant composition of claims 2 or 5150 wherein said carboxylic acid is a C₈- to C₂₂-carboxylic acid.
36. **(Currently Amended)** The surfactant composition of claims 2 or 518 wherein 3 to 5 different co-amphiphiles are employed.
37. **(Currently Amended)** The surfactant composition of claim 9 wherein said long chain alcohol is a C₈- to C₂₄-alcohol.
38. **(Currently Amended)** The surfactant composition of claim 10 wherein said long chain alcohol is a C₈- to C₂₄- alcohol.
39. **(Original)** The surfactant composition of claim 11 wherein said composition (a) contains water.
40. **(Original)** The surfactant composition of claim 11 wherein said composition (b) contains an oil component.
41. **(Currently Amended)** The surfactant composition of claim 13 wherein the temperatures X and Y are different by at least 5° C.
42. **(Original)** The surfactant composition of claim 17 wherein the surfactant composition comprises 0.1 to 6 wt% of the components (A) and (B), referring to the total composition.

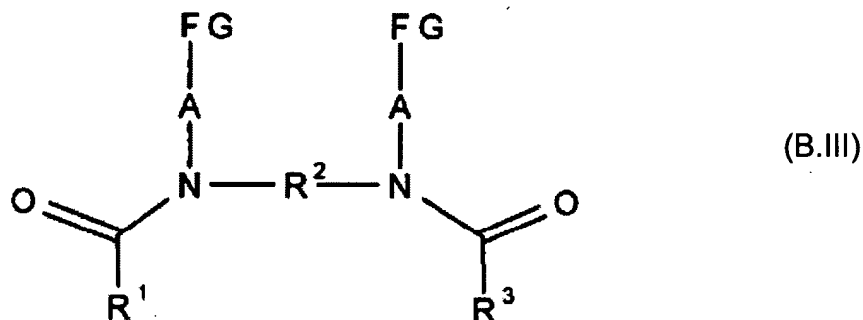
43-50. (Canceled)

51. (New) A surfactant composition comprising

- (A) 1 to 70 wt% referring to components (A) and (B), of one or more gemini surfactant(s) and,
(B) referring to the remainder, based on the total of components (A) and (B), two or more co-amphiphile(s) having an HLB value of less than or equal to 6;

wherein

- at least one gemini surfactant has the general formula (B.III)



wherein the substituents have the following meaning

FG is $-\text{COOM}$ or $-\text{SO}_3\text{M}$;

R^1, R^3 is C_5 - to C_{25} -alkyl, that can be branched, unbranched, saturated, or unsaturated as far as not adjacently diunsaturated;

R^2 is C_1 - to C_{12} -alkylene;

A is CHR^4 , CH_2 , C_2H_4 , C_3H_6 , C_4H_8 ;

R^4 is aminocarboxylic acid radical; and

M is alkali, (alkyl)ammonium, alkanol ammonium, H, or $\frac{1}{2}$ alkaline earth;

and wherein

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- the co-amphiphile(s) having an HLB value of less than or equal to 6 comprise a mixture of at least two different co-amphiphiles selected from at least two different groups (a) to (d):

- (a) one long chain alcohol(s) being C₆- to C₄₀- alcohol(s);
- (b) long chain acid(s) being C₆- to C₂₄- carboxylic acid(s);
- (c) ester(s)/partial ester(s) of a polyol with one or more mono- or polycarboxylic acid(s) selected from the group consisting of:
 - a sorbitan (C₆- to C₂₂-) ester,
 - a methylglucoside (C₆- to C₂₂-) ester,
 - a sugar (C₆- to C₂₂-) ester,
 - a mono-, di-, and triglyceride of a C₆- to C₂₂- carboxylic acid,
 - a lactic acid or citric acid esterified derivative of a mono- or di-glyceride of a C₆- to C₂₂-carboxylic acid,
 - a polyglycerol (C₆- to C₂₂-) ester, and
 - a vitamin ester;

and

- (d)
 - salicylic acid
 - benzoic acid
 - lecithin